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10/789,441

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EXAMINER

ALIA, CURTIS A

ART UNIT

PAPER NUMBER

2416

MAIL DATE

DELIVERY MODE

10/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/789,441

Applicant(s)

ASCHEUER ET AL.

Examiner

Curtis A. Alia

Art Unit

2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20, 21, 23, 24, 36, 37, 39 and 40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20, 21, 23, 24, 36, 37, 39 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ ~~Notice of Informal Patent Application~~
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's amendment dated 7 July 2008 has been entered. Claim 25 has been cancelled and claims 20 and 34 have been amended. Claims 20, 21, 23, 24, 26-38, 39 and 40 are still pending in this application, with claims 20 and 34 being independent. Please note that AU 2616 has been changed to AU 2416.

Response to Arguments

1. Applicant's arguments filed 7 July 2008 have been fully considered but they are not persuasive.

In response to Applicant's arguments that Hill only teaches that one slave synchronizes to two master devices, the Examiner respectfully disagrees. Hill teaches that a slave can synchronize to a master node in one piconet then resynchronize to another master node in another piconet. Since a well-known feature of the piconets (i.e. Bluetooth) is that a master node of one piconet can be a slave in another piconet, the slave of a piconet can synchronize itself to the master of that piconet who happens to also be a slave of a piconet.

Applicant's arguments with respect to claims 34-37 and 39-40 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 20, 23, 26, 31, 34-37 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris (previously cited US 7,042,863) in view of Hill et al. (previously cited US 2004/0147267).

Regarding claim 20, Morris discloses a method for data transmission, in particular on the basis of the Bluetooth standard (see column 1, lines 43-46), in which data packets can be interchanged by radio by using time slots (see column 1, lines 46-47), the method comprising: establishing a first communication channel between a master subscriber and a first slave subscriber (see column 1, lines 51-54, each slave device is given a chance to transmit, also read as given a channel), operating the first communication channel to perform data exchange during a first time slot followed by a first subsequent time slot in which no data exchange occurs (see figure 1, S₁ transmits in T₁ and then no data is transmitted during T₂ (only a polling broadcast by the master)), establishing a second communication channel between the master subscriber and a second slave subscriber (see column 1, lines 51-54, each slave device is given a chance to transmit, also read as given a channel) and operating the second communication channel to perform data exchange during a second time slot followed by a second subsequent time slot in which no data exchange occurs (see figure 1, S₂ transmits in T₃ and then no data is transmitted during T₄ (only a polling broadcast by the master)) and wherein synchronizing the second communication channel includes causing data exchange during a specified time slot, the specified time slot determined based upon a time slot in which data exchange occurs in the first

communication channel (see column 1, lines 51-54, each slave unit is given the opportunity to use a time slot, read as a slave gets a time slot depending on how many time slots are taken by other slaves in the piconet, thus getting a time slot is based in part on another slave's time slot usage).

Morris does not explicitly teach operating the second communication channel including synchronizing the second communication channel to the first communication channel and determining a synchronization parameter for synchronization of the second communication channel, the synchronization parameter defining a phase offset for data interchange between the master subscriber and each of the first and second slave subscribers via, respectively, the first communication channel and the second communication channel.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. In particular, Hill teaches operating the second communication channel including synchronizing the second communication channel to the first communication channel (see paragraph 27, lines 3-5, a slave unit on one channel that is participating on two piconets must adjust its clock offset and phase offset to the other channel's clock and phase) and determining a synchronization parameter for synchronization of the second communication channel, the synchronization parameter defining a phase offset for data interchange between the master subscriber and each of the first and second slave subscribers via, respectively, the first communication channel and the second communication channel (see paragraph 27, lines 3-5, the synchronization is performed to select the correct phase by determining the proper clock offset from the master device on the channels, the master in one piconet can also be a slave in another

piconet in the scatternet, thus being a first slave, the second slave synchronizing to the clock of the master that happens to also be a slave).

In view of the above, having the method of Morris, then given the well-established teachings of Hill, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris as taught by Hill, since Hill stated in paragraph 28, lines 15+ that when a mobile device connected to Bluetooth starts to roam, a handoff can occur to maintain link quality.

Regarding claim 23, Morris discloses that at least one of the group consisting of the first communication channel and the second communication channel includes an SCO data link, with a time interval of $T_{SCO} = 4$ timeslots or $T_{SCO} = 6$ time slots (see figures 6 and 7, a slave, such as S_1 can take up more than one timeslot).

Regarding claim 26, Morris does not explicitly teach that the first time slot and the second time slot at least partially overlap.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. In particular, Hill teaches that the first time slot and the second time slot at least partially overlap (see paragraph 27, when a slave is in more than one piconet, it must synchronize with the channel corresponding to the piconet desired, it will fall out of sync with the other piconet it is connected to, thus inevitably overlapping its channel time slots with the channel time slots of the first slave).

In view of the above, having the method of Morris, then given the well-established teachings of Hill, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris as taught by Hill, since Hill stated in paragraph 28, lines 15+ that when a mobile device connected to Bluetooth starts to roam, a handoff can occur to maintain link quality.

Regarding claim 31, Morris discloses that slot-based data interchange takes place between the master subscriber and the first and second slave subscribers (see figures 5-7, every device, whether slave or master, only transmits during a time slot, making the system slot-based).

Regarding claim 34, Morris discloses a data transmission system which is based on the Bluetooth standard (see column 1, lines 43-46), comprising a master subscriber (see figure 2, M), first and second slave subscribers operable to communicate data packets with the master subscriber (see figure 2, S1 and S2) by radio using a time slot method (see column 1, lines 43-51), a first communication channel providing data interchange between the master subscriber and the first slave subscriber (see column 1, lines 51-54, each slave device is given a chance to transmit, also read as given a channel), a second communication channel providing data interchange between the master subscriber and the second slave subscriber (see column 1, lines 51-54, each slave device is given a chance to transmit, also read as given a channel), the second communication channel performing data exchange during a specified time slot, the specified time slot determined based upon a time slot in which data exchange occurs in the first communication channel (see column 1, lines 51-54, each slave unit is given the opportunity to

use a time slot, read as a slave gets a time slot depending on how many time slots are taken by other slaves in the piconet, thus getting a time slot is based in part on another slave's time slot usage) and a control device operable to control a setting up of the first and second communication channels as well as a timing of the data interchange between the master subscriber and each of the first and second slave subscribers (see column 1, lines 41-55, time division duplex scheme where the master establishes communications with up to 7 slaves, each having their own time slot to exchange data with the master).

Morris does not explicitly teach that the control device is being configured to determine synchronization parameters for synchronization of the second communication channel, the synchronization parameter defining a phase offset for data interchange between the master subscriber and each of the first and second slave subscribers via, respectively, the first communication channel and the second communication channel.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. In particular, Hill teaches that the control device is being configured to determine synchronization parameters for synchronization of the second communication channel, the synchronization parameter defining a phase offset for data interchange between the master subscriber and each of the first and second slave subscribers via, respectively, the first communication channel and the second communication channel (see paragraph 27, lines 3-5, the synchronization is performed to select the correct phase by determining the proper clock offset from the master device on the channels, the master in one piconet can also be a slave in another piconet in the scatternet, thus being a first slave, the second slave synchronizing to the clock of the master that happens to also be a slave).

In view of the above, having the system of Morris, then given the well-established teachings of Hill, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the system of Morris as taught by Hill, since Hill stated in paragraph 28, lines 15+ that when a mobile device connected to Bluetooth starts to roam, a handoff can occur to maintain link quality.

Regarding claim 35, Morris discloses that the data transmission system comprises a comprising a maximum of five additional slave subscribers, and wherein the master subscriber, the first slave subscriber, the second slave subscriber and the additional slave subscribers are simultaneously actively involved in the data interchange (see column 1, lines 51-54, Bluetooth standard supports 7 slave active slave units).

Regarding claim 36, Morris discloses the master subscriber and at least one slave subscriber can be operated in an operating mode in which data is interchanged periodically in first time slots and no data is interchanged in adjacent second time slots (see figure 1, S_1 transmits in T_1 and then no data is transmitted during T_2 (only a polling broadcast by the master)).

Regarding claim 37, Morris does not explicitly teach that the data transmission system includes a cordless digital communication system.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. In particular, Hill teaches that some Bluetooth devices are mobile units, such as a

mobile phone and a PDA, which are cordless digital communication devices (see paragraph 28, lines 1-5).

In view of the above, having the method of Morris, then given the well-established teachings of Hill, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris as taught by Hill, since Hill stated in paragraph 28, lines 15+ that when a mobile device connected to Bluetooth starts to roam, a handoff can occur to maintain link quality.

Regarding claim 39, Morris does not explicitly teach that the control device comprises a link manager.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. Hill teaches that the Bluetooth protocol includes a Link Manager Protocol which is responsible for setting up links between the Bluetooth devices (see paragraph 15).

In view of the above, having the method of Morris, then given the well-established teachings of Hill, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris as taught by Hill, since Hill stated in paragraph 28, lines 15+ that when a mobile device connected to Bluetooth starts to roam, a handoff can occur to maintain link quality.

Regarding claim 40, Morris does not explicitly teach that the control device includes a programmable unit.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. In particular, Hill teaches that some Bluetooth devices are mobile units, such as a mobile phone and a PDA, which are cordless digital communication devices (see paragraph 28, lines 1-5).

In view of the above, having the method of Morris, then given the well-established teachings of Hill, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris as taught by Hill, since Hill stated in paragraph 28, lines 15+ that when a mobile device connected to Bluetooth starts to roam, a handoff can occur to maintain link quality.

10. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris in view of Hill as applied to claim 20 above, and further in view of Kim et al. (previously cited US 2003/0103487).

Regarding claim 21, Morris and Hill do not explicitly teach operating the first communication channel in one of the group consisting of a sniff mode and a park mode.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Kim. In particular, Kim teaches that Bluetooth slaves can operate in three power saving modes, including both the sniff mode and park mode (see paragraph 9, lines 1-3).

In view of the above, having the method of Morris and Hill, then given the well-established teachings of Kim, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris and Hill as taught by Kim, since

Kim stated in paragraph 19 that the number of active and parked slaves are taken into account when configuring beacon slots.

Regarding claim 24, Morris does not explicitly teach that at least one of the group consisting of the first communication channel and the second communication channel includes an ACL data link which is operated in at least one of the group consisting of the sniff mode and the park mode.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Hill. In particular, Hill teaches that the master can allocate links to slaves as either SCO or ACL links (see paragraph 13, lines 5-9)

Furthermore, Morris and Hill do not teach that the master can operate the slaves in sniff mode or park mode.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Kim. In particular, Kim teaches that the master can operate the slaves in sniff mode or park mode (see paragraph 9, lines 1-3).

In view of the above, having the method of Morris and Hill, then given the well-established teachings of Kim, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris and Hill as taught by Kim, since Kim stated in paragraph 19 that the number of active and parked slaves are taken into account when configuring beacon slots.

4. Claims 27-29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris in view of Hill as applied to claim 20 above, and further in view of Official Notice.

Regarding claim 27, Morris and Hill do not explicitly teach that the first time slot in the first communication channel is immediately adjacent in time to the second time slot in the second communication channel. It would have been obvious to a person having ordinary skill in the art at the time of the invention that a time slot for the first channel would fall immediately adjacent in time to a time slot for the second channel since it was known in the art that SCO links do not need polling messages at each transmission, thus utilizing time slots one after the other.

Regarding claim 28, Morris and Hill do not explicitly teach that a period of the first communication channel is an integer multiple of a period of an SCO communication channel operating in a first mode. It would have been an obvious matter of design choice to one of ordinary skill in the art at the time of the invention to use multiples of a time parameter, since such a modification would have involved a mere change in size of a parameter. A change in size is generally recognized as being within the level of ordinary skill in the art.

Regarding claim 29, Morris and Hill do not explicitly teach that a period of the second communication channel is an integer multiple of a period of the first communication channel. It would have been an obvious matter of design choice to one of ordinary skill in the art at the time of the invention to use multiples of a time parameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 32, Morris and Hill do not explicitly teach that frame-based data interchange takes place between the master subscriber and the first and second slave subscribers. It would have been obvious to a person having ordinary skill in the art at the time of the invention to perform frame-based data interchange since it was known in the art that data interchange in the Bluetooth standard is either time-based or frame-based.

5. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morris in view of Hill as applied to claim 20 above, and further in view of Milley et al. (previously cited US 7,292,588).

Regarding claim 33, Morris and Hill do not explicitly teach synchronizing the second communication channel further comprises employing a programmable unit, to synchronize the second communication channel.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Milley. In particular, Milley teaches the use of a CPU in a primary computing device capable of personal area networking comprising means for generating command data for synchronizing a secondary device with the computing device (see column 5, lines 1-20).

In view of the above, having the method of Morris and Hill, then given the well-established teachings of Milley, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Morris and Hill as taught by Milley, since Milley stated in column 2, lines 23-32 that wirelessly connecting a primary device with a secondary device to display full internet content using a remote display is possible.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis A. Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Friday, 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2416

/Curtis A Alia/
Examiner, Art Unit 2416
10/24/2008

CAA